

ABSTRACT

A system for detecting tactile information includes strain-gauge touch sensors and a controller. Based on the sum output from each of touch-sensor sensor units, an analyzer in the controller calculates touch force $F_i(t)$ at each measurement point. An automatic gain control adjusts the voltage amplitude $A_i(t)$ of a sine wave of frequency f_i applied to the sensor units at each measurement point to bring the voltage amplitude measured at each measurement point in line with a target voltage. The adjusted voltage $A_i(t)$ is applied to the bandpass filter with a composite sine wave $y(t)$ which includes sine waves of each frequency corresponding to the adjusted voltage amplitude $A_i(t)$. This makes it possible to reduce the number of lines between the controller and touch sensors that includes numerous measurement points, and enables the gain of the touch sensors constituted by strain gauges to be controlled within an appropriate range.